

Adverse Race-Related Events as a Risk Factor for Posttraumatic Stress Disorder in Asian American Vietnam Veterans

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Abstract: Few studies have explored the relationship between exposure to adverse race-related events and posttraumatic stress disorder (PTSD). This study examined whether adverse race-related events can give rise to symptoms that meet the criteria for a PTSD diagnosis as specified in the DSM-IV. Three hundred Asian American Vietnam veterans were administered a Mississippi Scale and a questionnaire that assessed exposure to adverse race-related events in the military and associated PTSD symptoms. A subsample was administered the Clinician-Administered PTSD Scale. A majority of the participants (77%) reported exposure to adverse race-related events. Depending on the number of events to which they were exposed, between 13% and 36% reported symptoms consistent with meeting full criteria for PTSD. Mississippi Scale scores increased significantly as a function of frequency of exposure to adverse race-related events. These results converge with the Clinician-Administered PTSD Scale findings to demonstrate that adverse race-related events can be traumatic and associated with PTSD. These findings support the construct and convergent validity of race-related PTSD.

Key Words: Race-related stressors, posttraumatic stress disorder, DSM-IV, Vietnam veterans, Asian American Pacific Islanders.

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Little attention has been given to whether race-related stressors can qualify as traumatic risk factors for PTSD despite the important social, legal, and clinical implications of such research. The relationship between exposure to adverse race-related events and posttraumatic stress disorder (PTSD) is largely unknown. Empirical inquiry into this issue is important to test conceptual models depicting exposure to racism as a stressful life event (Clark et al., 1999; Klonoff et al., 1999). Such inquiry is also important to enlarge our current body of knowledge on ethnic minority status and increased risk for PTSD, primarily in the context of military service and combat (Laufer et al., 1984; Parson, 1984, 1990; Penk and Allen, 1991). Furthermore, such research may potentially resolve issues raised in epidemiological studies such as the National Vietnam Veterans Readjustment Study (NVVRS) that suggested an increased risk for PTSD among blacks and Hispanics, although once exposure to combat was controlled, ethnic differences remained significant only for Hispanics (Kulka et al., 1990b). Research on adverse race-related events and PTSD might also clarify whether minority status per se predicts higher PTSD prevalence among Vietnam veterans, as Friedman et al. (2004) found that Japanese American Vietnam veterans had a lower rate of PTSD not attributable to differences in war zone exposure, while Beals et al. (2002) found higher rates of PTSD among American Indian veterans that were nonsignificant once combat exposure was controlled.

Case studies and small surveys of Asian American Pacific Islander (AAPI) Vietnam veterans have documented negative race-related experiences of being associated with the enemy by fellow Americans, or conversely, of culturally identifying with the Vietnamese (Hamada et al., 1988; Kiang, 1991; Loo, 1994; Loo and Kiang, 2003; Loo et al., 1998; Matsuoka et al., 1992). To examine the relationship between race-related stressors and PTSD in the context of Vietnam military service, Loo et al. (2001) constructed and validated a Race-Related Stressor Scale (RRSS) for Asian American Vietnam veterans. As part of the Asian American Vietnam Veterans Race-Related Study (AVRS), they found that race-

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related stressors were uniquely and significantly related to PTSD symptoms and general psychiatric distress, even after controlling for combat exposure and military rank. Frequency of exposure to race-related stressors significantly predicted levels of PTSD and general psychiatric distress. Exposure to race-related stressors predicted an additional 20% of the variance in PTSD symptoms beyond that explained by combat exposure and military rank. Findings implied that "personal experiences of racism are potent risk factors for PTSD" (Loo et al., 2001, p. 515).

To assess whether exposure to negative race-related events is a risk factor for PTSD, we examined (a) whether adverse race-related events meet criterion A for traumatic

events in DSM-IV (American Psychiatric Association, 1994); (b) whether adverse race-related events are associated with symptoms consistent with the diagnostic criteria for PTSD; and (c) whether increased frequency of exposure to adverse race-related events is associated with an increased probability of PTSD.

METHODS

Participants

Study participants were 300 veterans of Asian American ancestry who served in the US Armed Forces in the Vietnam theater between February 28, 1961, and May 7, 1975, and participated in the Department of Veterans Affairs-sponsored AVRS between January 1998 and May 1999. The study sample included Chinese, Filipino, Korean, Japanese, Okinawan, Chamorro, or mixed race with some Asian ancestry (36% of the sample were Asian mixed-race; 21% reported being of mixed Asian-Pacific Islander ancestry). Our inclusion criteria permitted participation by veterans of mixed Asian ancestry, for example Asian-Hawaiian or Asian-Caucasian. Chamorro, natives of Guam, are believed to have some Asian ancestry but self-identify as Pacific Islanders. Table 1 contains the overall demographics of the AVRS sample compared with the nationally representative sample of Vietnam veterans of all races and ethnicities who participated in the NVVRS in the late 1980s (Kulka et al., 1990b). Table 2 provides the racial demographics of our sample. Most of respondents in our sample and the NVVRS sample served in the US Army, and the median age at date of entry into Vietnam was between 20 and 21 years of age for our sample and for the NVVRS sample. Our sample had a higher proportion of commissioned or warrant officers (grades 01–06;

TABLE 1. Demographic Characteristics of the Sample: AVRS and the NVVRS Comparisons^a

Variables	AVRS full sample, %	AVRS CAPS sample, %	NVVRS, %
Age at date of entry into Vietnam			
19 or younger	32	48	24
20	14	27	23
21	11	11	16
22–24	15	11	19
25 or older	28	3	18
Military branch of service			
Army	70	68	56
Marines	10	19	14
Navy	10	8	17
Air Force	10	5	13
Rank			
Enlisted E1–E4	30	51	53
Enlisted E5	26	41	29
Enlisted E6–E9	23	8	13
Warrant officer 1–4, officer 01–06	20	0	5
Employment history			
Full time	39	32	88
Unemployed	13	16	5
Disabled	13	22	NA
Retired	23	8	2
Other	12	22	5
Current yearly income			
Under \$20,000	30	54	32
\$20,000–\$29,000	12	23	30
\$30,000–\$39,000	21	20	21
\$40,000–\$49,000	8	0	8
\$50,000+	29	3	9

Percentages summing to under 100% reflect rounding.

^aReprinted with permission from Kulka et al. (1990a), Table 4-2.

TABLE 2. Racial Demographics of the Sample

Race/ethnicity	%	N
Japanese/Okinawan	21.3	64
Chinese	14.3	43
Chamorro	13.3	40
Filipino	12.0	36
Asian-Hawaiian	11.7	35
Asian-Caucasian-Hawaiian	6.0	18
Asian-Caucasian	5.3	16
Asian-other	4.7	14
Asian-Chamorro	4.0	12
Mixed Asian	3.7	11
Korean	3.0	09
Chamorro-Caucasian-other	.7	02
Missing data	0	0
Total	100	300

W1–W4) compared with the NVVRS sample; 20% of our sample achieved the military rank of commissioned or warrant officer, compared with 7% of the NVVRS sample.

Multiple sampling methods were used to recruit participants with a wide range of demographic (e.g., income, employment history), military (e.g., rank, branch of service) and health status characteristics (e.g., treatment and nontreatment seekers). Of the participants, 74% ($N = 221$) were obtained through snowball sampling, 13% ($N = 40$) were drawn from registries of veterans maintained by the Defense Manpower Data Center, and 13% ($N = 39$) were drawn from Department of Veterans Affairs registries of treatment seekers. The snowball sampling procedure used word-of-mouth recruitment efforts by staff at Vet Centers and specialized PTSD treatment programs and veteran service organizations, or recruitment by means of public media coverage and other study participants. The Defense Manpower Data Center lists were used to identify nontreatment seekers and officers. The Department of Veterans Affairs lists were used to identify users of medical and mental health services provided by the Veterans Administration. These lists were obtained from Department of Veterans Affairs Centers in California and Hawaii.

Potential participants were selected from both registries using a multistage sampling procedure: (a) names were drawn on the basis of Asian surname; (b) lists were stratified by probable Asian ethnicity for the four major Asian ethnic groups (Chinese, Filipino, Japanese/Okinawan, and Korean) on the basis of Asian surname or first name; and (c) a random sample was drawn from each ethnic subgroup using a sampling ratio that would draw roughly comparably sized samples from each of the four major Asian subgroups to try to obtain an adequate representation from each ethnic subgroup. Fifty-nine percent of the sample was from Hawaii, 24% from California, and 17% from Guam and Samoa.

In addition, a purposive subsample of 37 participants was administered the Clinician-Administered PTSD Scale (CAPS). To assess whether negative race-related events can give rise to PTSD when using a validated, clinician-administered PTSD measure, we administered the CAPS to a selected subsample who had been exposed to negative race-related events. The purposive sample was selected from among those participants who reported experiencing negative race-related events on the Impact of Race-Related Events (IRE) questionnaire. Selection criteria for the CAPS subsample consisted of those whose responses on the IRE showed (a) positive endorsement on items intended to measure criteria A1 or A2; (b) those who, if they had not positively endorsed A1 or A2 items on the IRE, had reported being exposed to more than three negative race-related events; or (c) those who had reported “quite a bit” or “extreme” distress (scores of 3 or 4) “then” or “now” on the IRE

related to any negative race-related event. Experienced clinicians were trained to administer the CAPS.

Measures

Impact of Race-Related Events

A new measure, the Impact of Race-Related Events (IRE), was constructed to assess for DSM-IV PTSD symptoms associated with specific negative race-related events. The IRE assesses whether the race-related event meets criterion A and includes 17 additional items tied to the key symptom features of PTSD (five re-experiencing symptom items, seven avoidance symptom items, and five hyperarousal symptom items). Participants were asked to respond yes or no to each item.

The IRE items were developed by the research team in collaboration with a panel of clinicians and researchers with extensive experience in the field of traumatic stress. Successive versions were reviewed until consensus was established about item clarity and content fidelity to the DSM-IV criteria. The IRE was administered to 11 volunteer participants who varied by Asian ethnic group, branch of military service, combat exposure, and status as treatment or nontreatment seeking veterans. Participants completed the IRE and were queried about clarity of items and reading difficulty.

The first item on the IRE assessed the presence (positive or negative) or absence of exposure to race-related events (“Think about the race-related events you experienced in the military. If you experienced no race-related experiences in the military or if all the race-related experiences you had were positive ones, check ‘None’ or ‘Only Positive’ here and skip to the next questionnaire”). The second item asked the participant to provide a narrative description of the two worst negative race-related events he/she had experienced (“If you experienced race-related events in the military, think of the two worst race-related events. On this page, describe one of these events. On page 3, you will be asked to describe a second event”). If the participant had experienced a negative race-related event, he/she was asked to describe as many as two of the worst race-related events experienced in the military, then was asked about specific PTSD symptoms associated with the event. Participants reporting two negative race-related events completed two sets of the same questions, one for each of the two events.

Meeting criterion A for PTSD in *DSM-IV* requires that “the person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others,” and that the participant’s response to the event involved “intense fear, helplessness, or horror” (American Psychiatric Association, 1994, p. 427–428). The IRE assessed whether a specific race-related event meets criterion A1 by asking participants to indicate whether they were physically injured and

whether they felt that their life was in danger: (a) "When it happened, were you physically injured?" and (b) "Did you feel your life was in danger?" We examined criterion A2 using items assessing whether participants' experienced fear, helplessness, or horror. A positive response to any of the three items was scored as meeting criterion A2. Both A1 and A2 had to be met to meet criterion A.

The IRE also included items related to three different symptom clusters: (a) criterion B, re-experiencing symptoms (e.g., nightmares, distress at reminders); (b) criterion C, numbing/avoidance (e.g., efforts to avoid people, places, and activities related to the events, detachment and numbing); and (c) criterion D, hyperarousal symptoms (e.g., insomnia, hypervigilance, irritability or anger). We assessed criterion E by requiring that symptoms endorsed have been present for at least a month and not present before the event ("At any time after the event occurred and for a period of at least a month, have you had any of these problems that you did not have before the event?").

We assessed criterion F (clinically significant distress or impairment in social, occupational or other important area of functioning) by asking, "How much distress or discomfort does this event cause you today, thinking back on it?" (4-point scale from 1 = none to 4 = extreme), and whether the problems interfered with any of the following areas at any time after leaving the military: (a) work, ability to work, or ability to work with certain types of people; (b) relationships with family, relatives, friends, spouse or intimate partner; (c) relationships with persons of another racial group; (d) physical health; (e) self-confidence/self-esteem; (f) general satisfaction or happiness; or (g) overall level of functioning in all areas of life (2-point scale for each item). A participant met criterion F if he/she had (a) a score of what was considered "significant distress," that is, a 3 (quite a bit) or 4 (extreme) on "distress today," (b) endorsed yes to the "overall level of functioning in all areas of your life," or (c) endorsed yes on two or more of the other impairment items.

Mississippi Scale for Combat-Related Posttraumatic Stress Disorder

The Mississippi Scale for Combat-Related Posttraumatic Stress Disorder (Mississippi Scale) is a self-report scale designed to measure PTSD symptoms in male veterans and comprises 35 items rated on a scale from 1 (never) to 5 (very frequently) (Keane et al., 1988). Scores can range from 35 to 175. The Mississippi Scale has shown excellent reliability with internal consistency and test-retest coefficients above .90, has been found to have excellent specificity (.89) and sensitivity (.93) with PTSD clinical diagnoses in a community sample of veterans (Kulka et al., 1990b) and an overall efficiency of .90 in differentiating veterans with and without PTSD (Keane et al., 1988).

Race-Related Stressor Scale

The Race-Related Stressor Scale (RRSS) is composed of 33 items rated on a scale from 0 (never) to 4 (very frequently) (Loo et al., 2001). Scores can range from 0 to 132. The RRSS has been shown to have excellent reliability with internal consistency above .90 and temporal stability of .85, indicating it to be a psychometrically sound measure of exposure to race-related stressors for this population (Loo et al., 2001). Significant relationships between the RRSS and generalized psychiatric distress symptoms, PTSD symptoms, and the PTSD diagnostic cutoff on the Mississippi Scale of 107 and above offer strong support for the construct and convergent validity of the RRSS.

Combat Exposure Scale

The Combat Exposure Scale (CES) is a 7-item self-report measure of combat exposure comprised of Likert-type items that are weighted differentially according to the severity of the experience (Keane et al., 1989). Total scores on the CES can range from 0 to 41. The CES has been found to have acceptable internal consistency (α coefficient = .85) and test-retest reliability ($r = .97$) (Keane et al., 1989). Combat exposure has been consistently found to be the strongest predictor of PTSD among male Vietnam veterans (King et al., 1999).

Military Rank

Military rank was assessed using the item, "What was the highest rank you attained in the military?" Military rank distributions were as follows: lowest-ranked enlisted (E1–E9), 5.3%; middle-ranked enlisted (E4–E5), 51.3%; highest-ranked enlisted (E6–E9), 23.3%; warrant officers (W1–W4), 2.7%; lowest-ranked officers (O1–O3), 5.3%; and middle-ranked officers (O4–O6), 12.0%. For our analyses, E1 to E5 was recoded as 0, and E6 to O6 was recoded as 1. Statistically significant relationships were found between military rank and the Mississippi Scale for PTSD scores, RRSS scores, and CES scores (Loo et al., 2001).

Clinician-Administered PTSD Scale

The Clinician-Administered PTSD Scale (CAPS), a structured PTSD assessment interview, is widely recognized as a gold standard for the clinical assessment of PTSD (Blake et al., 1990; Weathers et al., 2001). The CAPS is a 30-item structured clinical interview designed to assess the 17 symptoms for PTSD as outlined in the DSM-III-R, along with eight associated symptoms (Blake et al., 1995). The CAPS assesses the frequency and intensity of each symptom using standard prompt questions and behaviorally anchored rating scales, is intended for use by experienced clinicians or trained paraprofessionals, and has been found to have excellent convergent and discriminant validity, diagnostic utility, and

sensitivity to clinical change (Weathers et al., 2001). To assess race-related PTSD, CAPS instructions were modified to focus on all negative race-related events that could be recalled, with each symptom query specifically anchored to the adverse race-related events reported.

Procedures

All study procedures were reviewed, approved, and monitored by an institutional review board. Data were collected from January 1998 to May 1999 in California, Hawaii, and Guam. Prospective participants were mailed a recruitment letter that described the project. Recruiters called to assess interest and eligibility. Participants interested and eligible came to a VA Medical Center or Vet Center and, after a signed informed consent was obtained, were administered a packet of questionnaires, including the IRE, military history, the RRSS, the CES, and the Mississippi Scale. Participants were debriefed individually. Participants were provided \$50 as compensation for time and travel.

CAPS Administration Procedures

A subsample of 37 participants from all sites who met the criteria described earlier was administered the CAPS between 2 and 160 days after the other measures were administered. Administration date was based on participant availability and the interviewer's travel schedule. Participants were provided an additional \$35 for their time and travel.

RESULTS

Exposure to Adverse, Positive, or No Race-Related Events, Single or Multiple Adverse Events

Seventy-seven percent ($N = 231$) of the participants reported exposure to one or more negative race-related events in the military, 7.3% ($N = 22$) reported exposure to only positive race-related events, and 15.7% ($N = 47$) reported no exposure to any race-related event. Of the 231 participants who were exposed to adverse race-related events, 23.8% ($N = 55$) described one event, and 76.2% ($N = 176$) described two or more events.

Examples of Adverse Race-Related Events

The following are examples of adverse race-related events reported by participants: (a) "I was beat up in the showers by my own buddies . . . I was made to believe I was not allowed to bathe with American soldiers because I was a 'gook'"; (b) "I was in Saigon, going home on compassionate leave . . . An American MP shot at me, not sure if I was friend or foe. I hit the ground face down and started yelling 'I'm American!'" (c) "My drill sergeant in boot camp always called me a 'gook' or 'chink'. I told him I was an Asian American and not to call me a 'gook'. He asked, 'What you going to do, gook?' and slapped me. I said: 'Don't do that

again!' He slapped me again. I slugged him and was put in the Brig."

PTSD Diagnostic Criteria and Symptoms

Table 3 contains the proportion of participants who reported exposure to adverse race-related events and symptoms related to criteria A, B, C, D, E, and F, and all criteria for PTSD, for those exposed to a single and multiple race-related events, respectively. Among those exposed to a single adverse race-related event, 22% met criterion A. Among those exposed to multiple adverse events, 49% met criterion A on the first reported event, and 43% met criterion A on the second reported event. Table 4 contains the frequencies and percents of participants who met PTSD criteria A1 and/or A2 on the IRE for those exposed to single and multiple adverse race-related events, respectively.

Meeting Full Criteria for Race-Related PTSD

Among those exposed to a single adverse race-related event ($N = 55$), 13% met full criteria for PTSD on the IRE. Among those exposed to multiple events ($N = 176$), 36% met full criteria for race-related PTSD on the first event, and 35% met full criteria for PTSD on the second event.

CAPS

A total of 86% of the sample administered the CAPS met criterion A for PTSD, 84% met criterion B, 78% met criterion C, 95% met criterion D, 92% met criterion F as defined by level of distress, 89% met criterion F as defined by impairment in social functioning, and 89% met criterion F as defined by impairment in occupational or other important area of functioning. A total of 65% of the sample adminis-

TABLE 3. Frequency and Percent Who Met PTSD Criteria for Adverse Race-Related Events on the IRE

Criteria met	Single event ($N = 55$)		Multiple events ($N = 176$)			
	%	N	Event 1		Event 2	
	%	N	%	N	%	N
A	22	12	49	87	43	76
B	58	32	82	145	79	139
C	40	22	61	107	64	112
D	42	23	68	119	63	111
F: distress	33	18	51	90	48	84
F: all areas impaired	38	20	53	92	49	87
F: distress, 2+ or all areas impaired	56	31	78	137	75	132
All criteria met	13	7	36	64	35	63

TABLE 4. Frequency and Percent Who Met PTSD Criteria A1 and A2 for Adverse Race-Related Events on the IRE for Single and Multiple Events (*N* = 231)^a

Criterion A: the stressor	Single (<i>N</i> = 55)		Multiple (<i>N</i> = 176)			
			Event 1		Event 2	
	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>
Met A1 and A2	21.8	12	49.4	87	43.2	76
Met A1 but not A2	1.8	1	3.4	6	5.1	9
Met A2 but not A1	45.5	25	22.7	40	29.5	52
Met neither A1 nor A2	30.9	17	24.4	43	20.5	36
Missing data		0		0	1.7	3
Total	100	55	99.9	176	100	176

^aA1 = physical injury or threat to life; A2 = reaction of fear, helplessness, or horror.

tered the CAPS met full DSM-IV criteria for PTSD (on the CAPS).

The percent agreement between the CAPS and the IRE was 64%, which represents a moderate level of agreement. Although we would expect the CAPS and IRE to be correlated, and a good correlation between the two would suggest validation for the IRE, we would not expect the level of agreement to be high because the CAPS and IRE measures differ in significant ways. First, the IRE measures PTSD symptoms lasting at least 1 month at any time after the event occurred that was not present at any time before the occurrence of the race-related event. In contrast, standard instructions on the CAPS requires that symptoms be present in the past month, thus making the CAPS a measure of current PTSD, a more stringent criterion than that measured by the IRE. Nine participants met criteria for PTSD on the IRE but did not meet criteria on the CAPS. Some participants who met criteria for PTSD on the IRE did not meet criteria for PTSD on the CAPS because they did not meet criterion C, the avoidance cluster of symptoms, within the last month, although they had met criterion C in regard to 1 month within a longer time frame.

Second, the IRE uses a dichotomous format, where a yes is scored as endorsement of the symptom. In contrast, on the CAPS, the participant must have a score of 1 or more on frequency and 2 or more on severity—that is, there must be moderate severity on the CAPS to be scored as a symptom endorsement. Accordingly, the CAPS appears to be a more stringent criteria than the IRE based on scoring instructions.

Third, the IRE asked participants to describe and rate two of the worst race-related events they had experienced in the military, whereas the CAPS was based on the accumulation of any and all negative race-related events to which the

participant was exposed while in the military. Also, because the CAPS administration followed that of the IRE, some participants had recall of exposure to more race-related events when they were administered the CAPS because they had had time to think about questions previously asked on the IRE. For example, one participant who recalled one race-related event on the IRE subsequently recalled 21 such events when interviewed with the CAPS. On this dimension, then, the IRE might have the more stringent criteria for meeting PTSD because the symptoms must be related to only the one event. We found that four participants met criteria for PTSD on the CAPS but did not meet criteria for PTSD on the IRE, which may be a result of the aforementioned difference.

Construct Validity

Exposure to Single Versus Multiple Events

χ^2 Analyses were performed to assess for statistical significance between the proportion who met criteria for race-related PTSD among those exposed to a single event (13%) compared with those exposed to multiple events (36%). We used the first of two reported events for those exposed to multiple adverse events as the proportion for the comparison, as the percent that met full criteria for PTSD on the second event was only 1% different from the first event. The difference in proportions meeting criteria for race-related PTSD for those exposed to a single event compared with those exposed to multiple events was highly significant ($\chi^2 [1, N = 231] = 11.00; p < 0.001$). In addition, results of a two-sample test of proportions found that the difference of proportions meeting criteria for race-related PTSD among single versus multiple exposure participants was also highly significant at the 0.001 level. Participants exposed to multiple adverse race-related events were significantly more likely to meet criteria for PTSD than those exposed to single events.

Race-Related Events and the Mississippi Scale

A one-way ANOVA revealed that scores on the Mississippi Scale increased significantly as a function of exposure to adverse race-related events and whether that exposure met criteria for PTSD ($F [1,287] = 104.73; p < 0.001$). The mean score on the Mississippi Scale for those with no exposure to negative race-related events was 72.4 ($SD = 23.5$). The mean score on the Mississippi Scale for those exposed to negative race-related events but who did not meet PTSD criteria for any of those events was 82.3 ($SD = 26.6$). The mean score on the Mississippi Scale for those who were exposed to negative race-related events and who met criteria for race-related PTSD for one or both events was 124.64 ($SD = 21.9$); this mean score falls above the cutoff of 107 for detecting PTSD caseness on the Mississippi Scale.

TABLE 5. Relationships Among IRE and Other Measures

Variable	IRE (3-point analysis)		IRE (2-point analysis)	
Mississippi Scale scores	$r = .61^{**}$	($N = 290$)	$r = .63^{**}$	($N = 223$)
Mississippi cutoff 107+	$\gamma = .81^{***}$	($N = 290$)	$\kappa = .59^{***}$	($N = 223$)
RRSS	$r = .70^{**}$	($N = 294$)	$r = .58^{**}$	($N = 228$)
CES	$r = .32^{**}$	($N = 298$)	$r = .29^{**}$	($N = 231$)
Military rank	$r = -.28^{**}$	($N = 300$)	$\kappa = -.26^{***}$	($N = 231$)

** $p < 0.01$; *** $p < 0.001$.

Relationships Between Race-Related PTSD (IRE) and Other Measures

We also examined the relationship between race-related PTSD on the IRE and other measures: (a) the Mississippi Scale; (b) scores of 107 and above on the Mississippi Scale; (c) the RRSS; (d) the CES; and (e) military rank. These relationships were analyzed in two ways. The first analyses included all participants, both those exposed and those not exposed to adverse race-related events, using 3 points (0 = no exposure to negative race-related events, 1 = exposure to one or more negative race-related events but none of the events met criteria for PTSD, and 2 = exposure to one or more negative race-related events in which the participant met criteria for PTSD for one or both events). The second analyses included only those participants who had been exposed to adverse race-related events, using 2 points (1 = exposed to negative race-related event and did not meet criteria for PTSD for any event, and 2 = exposed to negative race-related events and met criteria for PTSD for one or both events).

Table 5 contains the analyses of IRE scores for the entire sample and reveals that all correlations between the IRE and other measures were significant. Furthermore, the correlations among the IRE and Mississippi Scale scores, the Mississippi cutoff for PTSD diagnosis, and RRSS scores were greater than the correlations between the IRE and CES scores or between the IRE and military rank.

DISCUSSION

Exposure to adverse race-related events in the military among this large sample of Asian American Vietnam veterans was neither a rare event nor a benign occurrence. A majority of participants, 77%, reported that they had experienced one or more negative race-related events in the military or Vietnam War. Moreover, of those exposed to adverse race-related events in the military, approximately three quarters were exposed to more than one such event. In addition, adverse race-related events were found to meet criterion A for traumatic events in the DSM-IV. For example, nearly half of the participants who were exposed to multiple adverse race-related events perceived at least one of these events as

life-threatening or a threat to their physical integrity, and reported having responded with fear, helplessness, or horror. Among those who reported exposure to one adverse race-related event, 22% perceived the event as a traumatic threat.

In addition, findings revealed that the consequences of exposure to adverse race-related traumatic events are profound. For example, of those exposed to multiple adverse race-related events, 36% met full criteria for a PTSD diagnosis. The finding that a majority of participants who met criteria for PTSD on the self-report IRE also met PTSD criteria on the clinician-administered CAPS lends further support to the notion that traumatic race-related events are potential risk factors for PTSD.

To examine further the construct validity of race-related PTSD, we conducted a number of secondary analyses. Consistent with expectations derived from studies on cumulative adverse events as a major risk factor for serious mental health problems (Felitti et al., 1998), we found that participants who reported more than one adverse event were significantly more likely to meet criteria for PTSD than those who reported a single event. Participants who reported more than one event were significantly more likely to meet criteria for PTSD for either the first or second event, compared with those who reported only a single event. We note that the IRE asked participants to describe the two worst events they had experienced, but it did not ask that the events be reported in chronological order. It is quite possible that some participants described the worst of the two events first. Thus, our data permit us only to compare participants exposed to single versus multiple events. The data cannot shed light on whether an event experienced chronologically later would be associated with an increased likelihood of PTSD.

Study findings also support the construct validity of race-related PTSD. It would be expected that a measure of race-related PTSD should be more highly correlated with other measures of PTSD and with frequency of exposure to race-related events (RRSS) than with exposure to other types of potentially traumatic events, such as combat exposure, and the results supported this expectation. The significant relationship between the IRE (a measure of whether specific events meet criteria for PTSD) and the RRSS (a measure of

frequency of exposure to race-related stressors) lends further support for the convergent and construct validity of race-related PTSD.

A caveat is that our sampling design does not permit conclusions about the prevalence of race-related PTSD in the general population of Asian American men and women who served in the United States military during the Vietnam War. Because our study design did not include comparison groups comprised of different racial and ethnic minorities, we cannot assess the extent to which the nature and impact of race-related experiences for Asian Americans generalize to other American ethnic groups, such as African Americans, Hispanics, or Native Americans. Although clinical case studies suggest that veterans from other ethnic minority groups may also have identified with the Vietnamese, causing psychological conflict, e.g., Parson's (1984) discussion of "gook-identification" (p. 1), the experience of being mistaken for the enemy would be expected to be more common among Asian Americans or those mixed-race persons with Asian ancestry.

A limitation that applies to nearly all research on PTSD involves the retrospective self-report of exposure to race-related or combat-related events. Traumatic race-related events are unlikely to be documented in military records, precluding record-based confirmation of the occurrence of retrospective self-reports. We cannot be certain of the accuracy of reporting of temporally distant stressful events or of whether there might have been a bias toward reporting such exposure or symptoms. To offset the possibility of such biases, we queried participants about both positive and negative race-related experiences and used a multimethod approach to assessing PTSD that included self-report and a structured clinician-administered scale.

The findings from this study suggest that adverse race-related events are risk factors for PTSD. Even as this finding awaits replication, it has significant clinical and policy implications. There is little empirical or clinical evidence that clinicians routinely ask clients who are members of minorities about their exposure to specific adverse race-related events. Our findings suggest, albeit in a highly circumscribed sphere (Vietnam service of AAPI veterans), that adverse race-related events can have significant adverse mental health consequences. Proper diagnostic practice with minorities may need to be revised to include assessment of exposure to racist events and race-related PTSD. Such assessment may be a critical component of developing more culturally competent behavioral health practices, and an assessment of how patients with race-related PTSD may respond to therapists of another race. Similarly, it may be important to evaluate whether existing evidence-informed treatments for PTSD may be readily adapted to address race-related PTSD or whether new treatments must be developed and evaluated.

Race relates to one's basic identity, is indelible, and usually a highly visible aspect of one's self-identity that

cannot be easily avoided. Thus, clinical sequelae of race-related trauma may have some unique clinical implications for self-acceptance, self-esteem, and hypervigilance in interpersonal relations. In short, a fruitful way to inquire about this question may be to investigate the differential impact on identity of race-related and nonrace related traumatic events. Also, race-related trauma may fall within the category of trauma as a result of intentional, external human design (PTSD-IHD); PTSD-IHD has been hypothesized to lead to more severe and longer lasting PTSD symptoms than stressors of natural or accidental design (Loo, 1993).

CONCLUSION

The findings of this multisite study of AAPI Vietnam veterans demonstrated that adverse race-related events experienced in the military can meet criterion A for traumatic events and can give rise to symptoms that meet criteria for PTSD diagnosis as specified in the DSM-IV. This finding converged for two different measures: the self-report IRE and the CAPS. In addition, findings revealed that increased frequency of exposure to adverse race-related events is associated with increased risk of PTSD. These results suggest that exposure to adverse race-related events can be a significant risk factor for PTSD among minorities. The clinical examination of minority veterans, whether in a Compensation and Pension evaluation or in the context of other mental health assessment and treatment, should assertively probe for exposure to adverse race-related events and for their possible consequences on mental health, including PTSD. Finally, these findings make a strong case for a large-scale epidemiological survey of the prevalence of race-related stress events among a larger population of ethnic minorities.

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